Center for Health Care Technologies

Improving national health care through cost-effective technology

The LLNL Center for Health Care Technologies is dedicated to providing improved health care to the nation through research and development of cost-effective medical technologies.

Working in partnership with health care providers, medical institutions, private industry, universities, and several government agencies, multidisciplinary teams of Laboratory engineers and scientists develop technology primarily in dual benefit areas where national security applications can be leveraged.

The Center employs Laboratory teams selected from the following core competencies:

- System integration and prototyping
- Laser systems
- Radiation systems
- Computation
- Microtechnology
- Information processing
- Chemistry and materials science
- Biomedical and forensic sciences.

Recent accomplishments

- Designed (in collaboration with a major manufacturer) a digital mammography system that reduces patient x-ray dose and improves diagnostic resolution. With this and several other companies, developed signal processing algorithms for various radiographic instruments.
- In cooperation with an internationally recognized medical center, introduced a revolutionary diagnostic showing in vivo small-structure bone loss. This diagnostic has significant potential applications for helping to identify and treat the 1.3 million osteoporotic fractures that occur each year.
- Developed and demonstrated a portable, miniaturized DNA diagnostic tool. Working with a major biotechnology firm, demonstrated the feasibility of disease identification, including HIV, using this technology.
- In conjunction with a well-known laser medical institute, designed and built a prototype laser and delivery system for treating port wine stain birthmarks.
- Demonstrated the application of microtechnology (microstructures and actuators) to the miniaturization of interventional clinical tools, such as catheters for neuroradiology.
- Designed, built, and transferred to industry, a field-portable gas chromatograph—mass spectrometer (GC-MS). This instrument is suitable for environmental and law enforcement use, as well as medical applications.

Availability: The Center and the expertise it has to offer are available now. We welcome discussions on existing technologies or possible collaborations.

Contact

Bart Gledhill
Phone: (510) 422-6299
Fax: (510) 424-4991
E-mail: healthcare@llnl.gov
Mail code: L-452